

LISTING OF THE CLAIMS

The following is a complete listing of the claims, which replaces all previous versions and listings of the claims..

1-21. (Cancelled).

22. (Currently amended) A compound comprising:

a moiety having an affinity for cancer cells;

an intercalating moiety coupled to the moiety having an affinity for cancer cells, wherein the intercalating moiety comprises at least one unsubstituted aromatic ring that shares two carbons with only one other aromatic ring, and is configured to insert into the structure of deoxyribonucleic acid, and wherein the intercalating moiety is functionalized with a ligand configured to coordinate a $[\text{metal}(\text{CO})_3]^+$ moiety; and

a metal complexed with the ligand attached to the intercalating moiety.

23. (Previously presented) The compound of claim 22, wherein the metal is a radioactive metal.

24. (Previously presented) The compound of claim 23 wherein the radioactive metal is a γ -emitting nuclide.

25. (Previously presented) The compound of claim 23, wherein the radioactive metal comprises Tc-99m, Re-186, Re-188, or Mn, or combinations thereof.

26. (Previously presented) The compound of claim 22, wherein the moiety having an affinity for cancer cells comprises a peptide, a protein, or any combination thereof.

27. (Previously presented) The compound of claim 23, wherein the moiety having an affinity for cancer cells comprises a peptide, a protein, or any combination thereof.

28. (Previously presented) The compound of claim 22, wherein the moiety having an affinity for cancer cells comprises a somatostatin-receptor binding molecule, a neurotensin-receptor binding molecule, a bombesin-receptor binding molecule, a GPIIb/IIIa-receptor binding molecule, an antibody, a penetratine, or a glycoprotein, or any combination thereof.

29. (Previously presented) The compound of claim 23, wherein the moiety having an affinity for cancer cells comprises a somatostatin-receptor binding molecule, a neurotensin-receptor binding molecule, a bombesin-receptor binding molecule, a GPIIb/IIIa-receptor binding molecule, an antibody, a penetratine, or a glycoprotein, or any combination thereof.

30. (Previously presented) The compound of claim 22, wherein the moiety having an affinity for cancer cells comprises an anti-sense oligonucleotide, a deoxy-uridine, or a spermidine, or any combination thereof.

31. (Previously presented) The compound of claim 23, wherein the moiety having an affinity for cancer cells comprises an anti-sense oligonucleotide, a deoxy-uridine, or a spermidine, or any combination thereof.

32. (Currently amended) A composition comprising:
an excipient; and
a compound comprising:
a moiety having an affinity for cancer cells;
an intercalating moiety coupled to the moiety having an affinity for cancer cells,
wherein the intercalating moiety comprises at least one unsubstituted aromatic ring that

shares two carbons with only one other aromatic ring, and is configured to insert into the structure of deoxyribonucleic acid, and wherein the intercalating moiety is functionalized with a ligand configured to coordinate a $[\text{metal}(\text{CO})_3]^+$ moiety; and

a metal complexed with the ligand attached to the intercalating moiety, wherein the metal comprises Tc-99m, Re-186, Re-188, or Mn, or combinations thereof.

33. (Previously presented) The composition of claim 32, wherein the metal is a radioactive metal.

34. (Previously presented) The composition of claim 32, wherein the moiety having an affinity for cancer cells comprises a peptide, a protein, or any combination thereof.

35. (Previously presented) The composition of claim 33, wherein the moiety having an affinity for cancer cells comprises a peptide, a protein, or any combination thereof.

36. (Previously presented) The composition of claim 32, wherein the moiety having an affinity for cancer cells comprises a somatostatin-receptor binding molecule, a neurotensin-receptor binding molecule, a bombesin-receptor binding molecule, a GPIIb/IIIa-receptor binding molecule, an antibody, a penetratine, or a glycoprotein, or any combination thereof.

37. (Previously presented) The composition of claim 33, wherein the moiety having an affinity for cancer cells comprises a somatostatin-receptor binding molecule, a neurotensin-receptor binding molecule, a bombesin-receptor binding molecule, a GPIIb/IIIa-receptor binding molecule, an antibody, a penetratine, or a glycoprotein, or any combination thereof.

38. (Previously presented) The composition of claim 32, wherein the moiety having an affinity for cancer cells comprises an anti-sense oligonucleotide, a deoxy-uridine, or a spermidine, or any combination thereof.

39. (Previously presented) The composition of claim 33, wherein the moiety having an affinity for cancer cells comprises an anti-sense oligonucleotide, a deoxy-uridine, or a spermidine, or any combination thereof.

40. (Currently amended) A method of using a composition, the method comprising:

administering a composition to a medical patient, wherein the composition includes a compound comprising:

a moiety having an affinity for cancer cells;

an intercalating moiety coupled to the moiety having an affinity for cancer cells, wherein the intercalating moiety comprises at least one unsubstituted aromatic ring that shares two carbons with only one other aromatic ring, and inserts into the structure of deoxyribonucleic acid, and wherein the intercalating moiety is functionalized with a ligand configured to coordinate a $[\text{metal}(\text{CO})_3]^+$ moiety; and

a metal complexed with the ligand attached to the intercalating moiety, wherein the ligand and the intercalating moiety provide at least a bidentate coupling to the metal.

41. (Previously presented) The method of claim 40, wherein the composition is administered to diagnose at least one of a tumor or a malignancy.

42. (Previously presented) The method of claim 40, wherein the composition is administered to treat at least one of a tumor or a malignancy.

43. (Previously presented) The compound of claim 22, wherein the intercalating moiety comprises a planar, heterocyclic aromatic ring structure.

44. (Previously presented) The compound of claim 22, wherein the intercalating moiety comprises acridine, porphyrin, ellipticine, carbazole, benzimidazole, or a compound that exhibits cytostatic activity, or any combination thereof.

45. (Previously presented) The compound of claim 23, wherein the intercalating moiety comprises a planar, heterocyclic aromatic ring structure.

46. (Previously presented) The compound of claim 23, wherein the intercalating moiety comprises acridine, porphyrin, ellipticine, phenanthroline, carbazole, benzimidazole, or a compound that exhibits cytostatic activity, or any combination thereof.

47. (Previously presented) The compound of claim 32, wherein the intercalating moiety comprises a planar, heterocyclic aromatic ring structure.

48. (Previously presented) The composition of claim 32, wherein the intercalating moiety comprises acridine, porphyrin, ellipticine, phenanthroline, carbazole, benzimidazole, or a compound that exhibits cytostatic activity, or any combination thereof.

49. (Previously presented) The compound of claim 33, wherein the intercalating moiety comprises a planar, heterocyclic aromatic ring structure.

50. (Previously presented) The composition of claim 33, wherein the intercalating moiety comprises acridine, porphyrin, ellipticine, phenanthroline, carbazole, benzimidazole, or a compound that exhibits cytostatic activity, or any combination thereof.

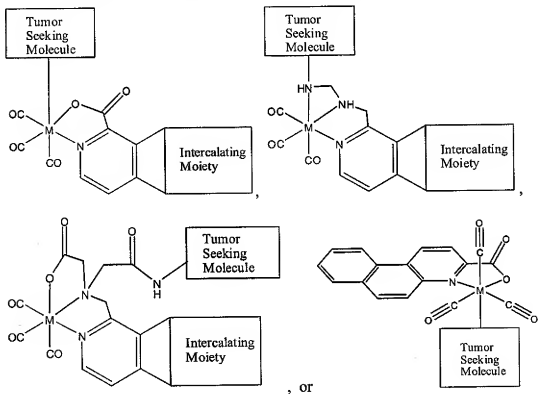
51. (Currently amended) A compound comprising:
a tumor seeking molecule, wherein the tumor seeking molecule has an affinity for a cancer cell, a tumor, or both;

an intercalating moiety comprising a planar, heterocyclic aromatic ring structure coupled to the tumor seeking molecule, wherein the planar heterocyclic aromatic ring structure comprises at least one unsubstituted aromatic ring fused to only one other aromatic ring by two carbons, and wherein the intercalating moiety is functionalized with a ligand configured to coordinate a [metal(CO)₃]⁺ moiety; and
a metal complexed with the ligand attached to the intercalating moiety.

52. (Previously presented) The compound of claim 51, wherein the tumor seeking molecule has an affinity for the cancer cell.

53. (Previously presented) The compound of claim 51, wherein the tumor seeking molecule has an affinity for the tumor.

54. (New) The compound of claim 51, comprising a structure of:



wherein M is the metal.